

# COST *and* MANAGEMENT

THE OFFICIAL JOURNAL OF

THE CANADIAN SOCIETY OF  
COST ACCOUNTANTS & INDUSTRIAL ENGINEERS

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at 25 cents each.

# Statistics

By HERBERT TATE, B.Sc., M.A.

*Professor of Mathematics, McGill University*

(Before Montreal Chapter, February 9, 1934.)

THE word statistics as generally used is ambiguous: it stands for large masses of figures or for the methods of obtaining, analysing and interpreting these masses of figures. It is indirectly derived from the mediaeval Latin word *status* which meant a political state and until the end of the 18th century meant merely the study of the state. Soon after the beginning of the 19th century numerical illustrations were employed to aid these studies and the word was then applied to the masses of figures used in these investigations and such terms as vital statistics became common. Later it was observed that similar masses of figures arose in other investigations and today statistics is no longer confined to matters dealing with the state. The functions of the statistician are to collect numerical data, to analyse them and to interpret the results of the analysis.

## History

One of the earliest statistical investigations of which we have any record is that of 3000 B.C. estimating the population and wealth of Egypt in connection with the construction of the pyramids and we read in the Book of Numbers that Moses was commanded to number the children of Israel. The first recorded study of vital statistics was made by John Gaunt of London in 1661 and 30 years later Neumann of Breslau collected the records of about 6000 deaths from the parishes of that city. These figures came into the possession of Edmund Halley, the English astronomer, who constructed from them a Mortality Table and also laid the foundation of the modern, mathematical theory of Life Assurance. These results were published in the Transactions of the Royal Society of London in 1692 but the methods were not adopted until about 70 years later. John de Witt, Grand Pensionary of Holland, wrote a paper in 1671 wherein he exposed the proper method of computing Life Annuities. Essentially he took a large number of annuitants of the same age and followed them throughout the whole course of their lives, noting the number of survivors at the end of each year and this gave him the total sum to be paid out in that year. He reduced all these sums to their present values, added them together and divided by the number of annuitants. Initially this gave him the art of an annuity at that age. This value is not the same as would be obtained by finding the expectation of life and calculating the present value of an annuity for this term which was the method suggested by the Roman, Ulpian, and generally used until the 18th century. Unfortunately an ungrateful country killed de Witt in 1672 soon after he had completed his work and it lay hidden in the archives of Holland until it was discovered some years ago and thus his work exercised no influence on the development of annuity formulae. Until about 100 years ago governments when pressed for money raised loans in return for annuities. Great Britain raised money in this way during the Napoleonic wars and sold annuities on the basis of a table which showed mortality rates heavier than actually occurred and consequently the money

## STATISTICS

they received was too low for the benefits paid. The shrewd Dutch people were aware of this and bought very heavily in these funds and at one period the annual deficit ran into millions so that the British public were paying taxes to provide the inhabitants of Holland with pensions! When this became known of course the practice was discontinued.

Prussia in 1719 was the first state to begin the regular collection of numerical data. Such collections had been made before but were undertaken only at irregular intervals for some special purpose—usually in anticipation of a war. To the U.S.A. we owe the decennial census inaugurated in 1790, followed by Great Britain in 1801 and now every great modern state takes a census at regular intervals.

### Purpose

A statistical investigation is usually undertaken to solve some special problem in which we are interested. This investigation involves the collection, analysis and interpretation of numbers and more-over of concrete numbers such as 1000 farms, 1000 females, etc. Hence we must to define the units in terms of which our collection is to be obtained. In defining our unit we must be careful to refer to the problem we wish to solve. Consider the unit implied by the term 'accident.' What we should consider an accident depends on our problem. If we are investigating accidents as a basis for compensation we should include only those accidents which involve such a loss of time as entails a loss of pay to the injured workman. But if we are investigating with a view to the elimination of accidents from a factory or industry we should include all accidents even those involving no loss of pay. For in these the aggregate loss of time, which falls on the employer, may be very considerable and they are often due to mere carelessness on the part of the employee.

### Average and Standard Deviation

Two of the most useful tools for aiding the statistician in his work are the average and the standard deviation. The average is usually the sum of the values of the items divided by their number. The standard deviation is found by subtracting the value of each item from the average, squaring, adding the results, dividing by their number and extracting the square root. In many practical investigations the standard deviation has a most remarkable property. If we first add the standard deviation to the average and secondly subtract it from the average we get two numbers between which are comprised about two-thirds of all the items we have collected: Hence, if the standard deviation is small compared with the average we know that most of the items are not very far away from the average in size and hence the average gives us a good picture in a simple form of what the items are generally like. This is one of the most important reasons why the average is so extensively used in practice. In studying weights at a given age the important thing is how far a given individual departs from the average weight compared with the standard deviation so that we can get an idea of whether he is abnormal or not. A note of warning must however be inserted. The use of a single number such as an average to sum up the general character of a mass of figures may obscure differences which are really fundamental. For example the average of \$3000, \$4000 and \$5000 and the average of \$5000, \$4000 and \$3000 are the same viz. \$4000. If these represented the annual profits of two businesses we should be inclined to conclude from the averages alone that they were in about the same condition whereas in the first the profits are increasing and in the second they are decreasing. Again suppose that a community has 1000 inhabitants with an income of \$1000 a

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year each and millionaire with \$1,000,000 a year. The average income is nearly \$2,000 which is far from being typical of the population. Suppose also we calculate the average wage in a factory employing both men and women. This average is typical of neither women's wage nor men's—it is too high for the former and too low for the latter.

### Sampling

Through lack of time and money it is rarely possible to examine the whole field to be investigated. We have to be content with samples. No sample ever affords an exact representation of the field from which it is drawn and we ask:—how near are such statistical constants as the average and standard deviation of our sample to the average and standard deviation of the whole field? They may differ for two reasons:—

(a) **The sample may not be adequate** i.e., it may not be large enough. It can be proved that the average of a sample approaches the average of the whole field in proportion to the square root of the number of items in the sample. If 100 items in a sample give us a certain degree of accuracy in our average then we have to take 400 items to give us double the accuracy. A useful working rule in determining how many items to include in a sample is to increase the size of the latter until successive averages etc., are sensibly the same.

(b) **The sample may be biased.** The sample may be adequate with respect to numbers and yet the items collected in such a manner that the average of the sample may be very far from the average of the field. This would be the case if we collected only the items of largest size. The worst kind of bias arises unconsciously from the inclination to collect only data that are easily available. In examining household budgets if we send out schedules we are likely to get answers from careful householders only, or in examining school children for physical defects if our examination happened to take place on a very cold day it is probable that a great number of defective children would be absent and the physically fit would be practically all present. The results would be typical of the children present on that day but would tend to show a higher average of physical fitness than actually obtains. Hence we must try to get items in our sample representative of all conditions.

Even when we have taken these precautions if we examine another sample selected on the same basis we shall not get the same average as the first sample shows. These differences are inevitable and are said to be due to random sampling. So the averages of two samples may differ and yet each sample belong to the same field. This leads us to another important question. We are given two samples with different averages and standard deviations can we tell whether they are drawn from the same population? The answer is that we can never tell with absolute certainty but theory gives us a criterion by which we can estimate the probability that they do or do not come from the same field.

### Index Numbers

A matter of great importance is the construction of Index Numbers. An index number purports to measure the average change in the price of a group of commodities from one time to another or from one place to another. Theoretically we take a group of commodities, find their average price at two different times or at two different places, divide one average by the other and thus get our Index Number. This is quite simple—in theory. But there are great practical difficulties. What commodities shall we select? Which of the many prices of a commodity shall we say is the price at a given

## STATISTICS

time or place? What average shall we use? Shall we count raw cotton and cotton prints in the same index? What relative importance shall we assign to coal, oil, bacon, etc? Experts are not agreed on the various methods of answering these questions—there are as many formulae for index numbers as there are experts and the number of these is legion. Index numbers have been constructed containing from twelve up to many hundreds of commodities—indeed the Canadian index of wholesale prices contains about 500, Bradstreet's about 96, Dunn's about 30 and Fisher's 205.

### Correlation

Another interesting problem is the possibility of connection between one set of figures and another and if some connection exists can we measure its amount? We know that the area of a square is found by multiplying the length of the side by itself, i.e., when we are given the length of the side we can predict exactly what the area is going to be. The whole of the variation in the area is due to the variation in the side. Here the connection is exact and we say there is perfect correlation and we denote this correlation by 1. At the other end we may ask if there is any connection between the water level in the St. Lawrence and the height of the policeman on point duty at Peel Street. The answer is obviously no—a knowledge of the water level alone is of no use in predicting the height of our policeman. In a case such as this we say there is no correlation and the correlation is denoted by 0. The amount of correlation between phenomena can vary numerically from 0 to 1. Consider again height and weight. Observation tells us that although men of say 68 inches in height can have many different weights at the same time tall men are likely to be heavier than short men, i.e., there is some connection between height and weight. But this connection is not of the precise kind as that existing between the side of a square and the area—for he would be a rash statistician who would predict the exact weight of a man 68 inches high from a knowledge of his height alone. Weight depends on many other factors than height, viz., heredity, food, amount of exercise taken, etc. Nevertheless there is some connection between height and weight and statisticians have devised a formula to measure the amount of this connection and this measure is called the coefficient of correlation.

The methods of statistics have led to important developments in Biology, Psychology and Education, etc., i.e., in cases where large numbers of individual items can be studied and where each item has been influenced by many independent factors operating without bias. We cannot however even approximate to these conditions in the great majority of data arising in economics and business. Certainly the ordinary simple business unit as a rule cannot give a sufficient number of items to which we can apply the methods of statistics with confidence. Many economic questions are influenced by dominant factors which are not independent and the theory of probability is not applicable to such phenomena. In such cases statistical results always leave room for differences of opinion. They are useful in simplifying a situation but rarely give us a positive conclusion. The greatest service we can often derive from them is negative, i.e., they may tell us that something or other cannot be something else rather than tell us it must be so and so. We must always go behind the figures and examine every possible conclusion that may be drawn from them for frequently the same set of figures admits of widely different interpretations. Suppose we use the quotient, receipts divided by expenditures, as a measure of estimating the efficiency of

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a transportation system. In one case this may be as high as 150% and in another case as low as 130%. It would not necessarily be just to say that the first system is more efficient than the second. In the first case freight may be carried in unopposed territory and in the second in territory exposed to intense competition where the most efficient management in the world could not reduce the figure much below that stated. The methods of statistics do not presume to give an exact answer to many questions but because we cannot tell all is no reason why we should not tell something. We have to make judgments and any instrument that is even of partial use is valuable in aiding our opinions. A witty professor once remarked that statistics can prove anything—even the truth sometimes. We must remember that the statistician is concerned with the collection of concrete numbers, their analysis and interpretation. Frequently these three operations are performed by different persons and it is not remarkable therefore that confusion results. Again statistics are of use only for comparison and we must be sure that the words used have the same significance at each time or place. In comparing imports for Great Britain, say, in 1933 with those for 1913 we should have to make sure that (a) the definition of an import has not changed—it has, of course, owing to the imposition of tariffs—(b) we are dealing with the same area and (c) the returns are accurate. In comparing railroad statistics in different countries difficulties are encountered owing to the different types of freight carried, the different types of territory passed and the different wagons used. Statistical numbers emerge often as a by-product of some administrative problem, e.g., in connection with customs duties or unemployment insurance and are frequently the only numbers available in dealing with our problem. Yet from their very method of collection, they may not be exactly what we want and for the reason that they do not cover the ground adequately may be susceptible of various interpretations. We must realize also that the statistical aspect may be only one phase of the problem and often a minor one: this aspect should be given its proper weight but no more than this. The theory of statistics is a delicate tool and can only give reliable results in the hands of an expert. Nobody expects to get the same result with a scapel as a surgeon does!

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## TARIFF AND TAXATION

### SOCIETY'S ANNUAL MEETING

The annual meeting of the Society was held on May 21st at the Lakeview Golf and Country Club, near Toronto. The golf game arranged in conjunction with the business meeting brought out only a small attendance, and was interrupted by rain; some members were reported as making good progress while others were silent on the subject; in any event the prizes were distributed by drawing lots.

For the business meeting, however, we had representatives of three Chapters, D. R. Patton, C.A., and T. I. Smythe being present from Montreal, and H. P. Wright, K. M. Horton, R. Dawson, and W. G. Smitton attending from Hamilton. Toronto was represented by several directors and members. G. H. Houston presided.

There was an extensive discussion of the Society's business, resulting in the following action: The fee of \$10 for non-residents, as adopted at a directors' meeting in Montreal on April 20th, was approved; a student membership, which had been discussed at various times over the past year, was adopted at an annual fee of \$5; and the Chapter proportion of fees was increased to 30 per cent.

Election of officers at the meeting of directors which followed resulted as follows: President, W. J. Mundell, C.A., Ogilvie Flour Mills Co. Ltd., Winnipeg; vice-presidents, R. W. Louthood, Beauharnois Power Corporation Ltd., Montreal, and H. P. Wright, Wright-Pounder Co., Hamilton; Honorary Treasurer, K. A. Mapp, F.C.A., Henry Barber, Mapp & Mapp, Toronto; honorary secretary, G. T. Bowden, M.C.I., Steel Company of Canada Ltd., Montreal.

The complete list of officers and directors of the Society and of the Chapters for 1934-35 appears on the inside front cover of this issue. This issue also contains the revised by-laws, membership list and other material about the affairs of the Society, which is being reprinted in pamphlet form for any who are interested.

## TARIFF and TAXATION

### DEPARTMENT OF NATIONAL REVENUE

#### Values for Duty Purposes—Asparagus and Lettuce

By an Order in Council passed under Section 43 of the Customs Act, the Honourable the Minister of National Revenue was authorized to fix the value for duty of Asparagus and Lettuce, and he, has, under such authority fixed the value for duty thereof at the following advances on the true invoice value if in Canadian funds, or its equivalent in Canadian funds, converted at the rate of exchange on the date of shipment, including all charges up to the point of direct shipment to Canada, when imported during the period specified:

	Per lb.	From	Until
Asparagus .....	2½c.	22nd April	30th June
Lettuce .....	1 c.	20th April	31st October

(All dates inclusive)

when entered under the Intermediate or General Tariff.

In the case of goods shipped on consignment without sale prior to shipment, the value for duty shall be the value as sold for home consumption at the time and place of direct exportation to Canada



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converted into Canadian funds at the rate of exchange on the date of shipment plus the above advances.

Provided that the value for duty shall in no case be less than the value as sold for home consumption at the time and place of original shipment plus all charges to the point of direct exportation to Canada, converted into Canadian funds at the rate of exchange on the date of shipment to Canada, plus the above advances.

The provisions of Section 6 of the Customs Tariff Act to apply, and goods shipped on consignment without sale prior to shipment will be subject to the same special duty as if the good had been sold prior to shipment at aforesaid home consumption value.

Provided however, that goods shall not be entered at less than their true invoice value.

Ottawa, 12th April, 1934.

### Values for Duty—Green Onions & Shallots, Radishes, Spinach

By an Order in Council passed under Section 43 of the Customs Act, the Honourable the Minister of National Revenue was authorized to fix the value for duty of Green Onions and Shallots, Radishes, and Spinach, and he has, under such authority, fixed the value for duty thereof at the following advances on the true invoice value if in Canadian funds, or its equivalent in Canadian funds, converted at the rate of exchange on the date of shipment, including all charges up to the point of direct shipment to Canada, when imported during the period specified:

	Per lb.	From	Until
Green Onions & Shallots ...	4 c.	1st May	8th Nov.
Radishes .....	5 c.	1st May	8th Nov.
Spinach .....	1½ c.	1st May	30th Nov.

(All dates inclusive)

when entered under the Intermediate or General Tariff.

In the case of goods shipped on consignment without sale prior to shipment, the value for duty shall be the value as sold for home consumption at the time and place of direct exportations to Canada of shipment plus the above advances.

Provided that the value for duty shall in no case be less than the value as sold for home consumption at the time and place of original shipment plus all charges to the point of direct exportation to Canada, converted into Canadian funds at the rate of exchange on converted into Canadian funds at the rate of exchange on the date the date of shipment to Canada, plus the above advances.

The provisions of Section 6 of the Customs Tariff Act to apply, and goods shipped on consignment without sale prior to shipment will be subject to the same special duty as if the goods had been sold prior to shipment at aforesaid home consumption value.

Provided, however, that goods shall not be entered at less than their true invoice value.

Ottawa, 19th April, 1934.

### Certificates "M-B" & "N-B" on Invoices—Chemicals and Drugs

Under authority of Order in Council (P.C. 604) dated 24th April, 1934, effective on and after 28th April, 1934, the requirement of one-half British content is reduced to one-quarter in respect of the chemicals and drugs hereinafter mentioned when for entry under the British Preferential Tariff.

The following paragraph is to be regarded as further supplement-



## TARIFF AND TAXATION

ing paragraph eight on page 5 of Memorandum No. 149, Second Revision, (see Supplements 1 and 2):

"For entry under the British Preferential Tariff on and after the 28th April, 1934, the requirement of one-half British content is reduced to one-quarter in respect of the following chemicals and drugs, viz:—

- Group 1. Tartaric acid and all tartrates;
- Group 2. Bismuth metal and oxides or salts of bismuth;
- Group 3. Mercury metal and all chemical compounds of mercury, not including pharmaceutical or other preparations of which mercury or a mercury chemical compound is only one of several constituents;
- Group 4. Potassium metal, potassium hydroxide and salts of potassium;
- Group 5. Bromine, bromides and other definite chemical compounds containing bromine, but not including pharmaceutical or other preparations of which bromine or a bromine chemical compound is only one of several constituents;
- Group 6. Iodine, iodides and other definite chemical compounds containing iodine, but not including pharmaceutical or other preparations of which iodine or an iodine chemical compound is only one of several constituents;
- Group 7. The following organic bases and all salts thereof,—
 

Asparagin	Pereirine
Aspidospermine	Pilocarpine
Benzol Ecgonine	Quebrachamin
Boldin Alkaloids	Quebrachin
Caulophyllin	Sabadine
Chelidonine	Sabadinine
Cornutine	Solanine
Daturine	Solanidine
Hydrastin	Veratrine
Hydrastinine	Yohimbine
Iridin	Ephedrine;
- Group 8. Drugs such as barks, flowers, roots, beans, berries, balsams, bulbs, fruits, insects, grains, gums, gum resins and oleo-resins, herbs, leaves, nuts, fruit and stem seeds, glucosides;
- Group 9. Agar agar, sweet almond oil, coriander oil, curara, turpentine and spirits of turpentine;
- Group 10. All essential oils.

Certificates of Origin "B" on invoice forms "M-B" and "N-B" for purposes of such entry may be altered accordingly.

NOTE:—Invoices of materials provided for in the aforementioned groups, in addition to the name of the materials, should show, where at all possible, the group number under which the 25% British content is permitted for British Preferential Tariff rates.

When materials, sold under a trade name or description, are provided for in the aforementioned groups and are invoiced under such trade name or description, the invoice, in addition to showing the group number under which 25% British content is permitted for British Preferential Tariff rates, should also show the ordinary pharmaceutical or chemical name of the product if possible."

Ottawa, 30th April, 1934.

### Strawberries

By an Order in Council passed under Section 43 of the Customs Act, the Honourable the Minister of National Revenue was authoriz-

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ed to fix the value for duty of Strawberries, and he has, under such authority, fixed the value for duty thereto at the following advance on the true invoice value if in Canadian funds, or its equivalent in Canadian funds, converted at the rate of exchange on the date of shipment, including all charges up to the point of direct shipment to Canada, when imported during the period specified:

	Per lb.	From	Until
Strawberries .....	2c.	18th May	31st July
When entered under the Intermediate or General Tariff.			

In the case of goods shipped on consignment without sale prior to shipment, the value for duty shall be the value as sold for home consumption at the time and place of direct exportation to Canada converted into Canadian funds at the rate of exchange on the date of shipment plus the above advance.

Provided that the value for duty shall in no case be less than the value as sold for home consumption at the time and place of original shipment plus all charges to the point of direct exportation to Canada, converted into Canadian funds at the rate of exchange on the date of shipment to Canada, plus the above advance.

The provisions of Section 6 of the Customs Tariff Act to apply, and goods shipped on consignment without sale prior to shipment will be subject to the same special duty as if the goods had been sold prior to shipment at aforesaid home consumption value.  
Ottawa, 10th May, 1934.

### New Zealand Trade Agreement, 1932

You are advised that by Order in Council (P.C. 978) dated 10th May, 1934, the New Zealand Trade Agreement, 1932 as published in Memorandum No. 534, has been extended for a further period of twelve months from the 24th day of May, 1934.  
Ottawa, 11th May, 1934.

### Supplement to Appraisers' Bulletin No. 4197

The Honourable the Minister of National Revenue has ordered that the fixed valuation for duty purpose on Strawberries, as set forth in Appraisers' Bulletin No. 4197, is not to apply to shipments imported prior to the 25th May, 1934.  
Ottawa, 18th May, 1934.

### Dried Egg Albumen

By an Order in Council passed under Section 43 of the Customs Act, the Honourable the Minister of National Revenue was authorized to fix the value for duty of Dried Egg Albumen, and he has, under such authority, fixed the value for duty thereof at 90 cents per pound in Canadian funds when entered under the Intermediate or General Tariffs.

The above value to apply at the point of production, and where the goods are shipped to Canada direct from an intermediate point, all charges to such point are to be added.

The provisions of Section 6 of the Customs Tariff Act to apply, and Dried Egg Albumen shipped on consignment without sale prior to shipment shall be subject to the same special duty as if the goods had been sold prior to shipment.

The above value is not to apply to importations bona fide purchased on or before the 18th May, 1934, and in transit to Canada on or before the 1st June, 1934.

## EXAMINATIONS, 1934

### EXAMINATIONS, 1934

The following are the names of successful candidates at the examinations of the Canadian Society of Cost Accountants and Industrial Engineers held in May, 1934, with the marks for papers on which 60 per cent or higher was secured:

	First Examination		Cost Accounting
	Book-keeping	Accounting	
Beaulieu, A., Montreal	—	—	72
Blouin, J. A., Montreal	—	—	63
Boyes, E. R., Montreal	—	—	75
Broh, M., Montreal	—	—	90
Cope, W. J., Montreal	—	—	74
Elmslie, D. J.	—	—	64
Gaudard, I. H., Montreal	—	—	72
Hallberg, V., Montreal	62	—	85
Humes, K., Montreal	—	—	69
Rochon, P., Montreal	—	—	87
Russell, A. W.	—	—	75

	Second Examination	
	Cost Accounting	Business Organization & Administration
Beauvais, J. E., Montreal	80	98
Bernier, J. I., Montreal	74	—
Bernstein, P., Montreal	—	81
Cassidy, G. F., Montreal	85½	84
Landermann, E. A., Montreal	60	—
Rochon, P., Montreal	68	73
Roll, J., Montreal	—	77
Sevigny, E. J., Montreal	—	71

A total of 13 candidates tried one or more papers of the first examination, and ten candidates tried one or more papers of the second examination, all of the candidates excepting one being in Montreal.

### THE TREND OF PRODUCTION COSTS

Commodity prices as measured by the Dominion Bureau of Statistics index number, which is based on the year 1926, declined from 72.0 in March to 71.1 in April. The following is a comparison by main groups:

	Apr. 1933	Mar. 1934	Apr. 1934
Foods, beverages and tobacco .....	64.1	72.5	69.9
Other consumers' goods .....	74.8	78.0	77.3
All consumers' goods .....	70.5	75.8	74.3
Producers' equipment .....	87.2	87.9	88.0
Building & construction materials .....	74.8	82.3	83.1
Manufacturers' materials .....	54.0	61.6	61.0
All producers' materials .....	57.8	64.6	64.2
All producers' goods .....	60.7	66.9	66.6
All commodities .....	65.4	72.0	71.1

The principal advances in April were in the following: Hides and skins, wool blankets, solder and prepared paints. The principal declines in April were in: Flour and milled products, sugar and its products and glucose, furs, milk and its products, fats, eggs, and raw wool.

## CHAPTER NOTES

### WINNIPEG

At the meeting of Winnipeg executive, following the annual meeting of the Chapter, the following officers were elected: Chairman, D. C. Hodson, Dominion Bridge Company Ltd.; vice-chairman, J. G. Mundie, C.A., Riddell, Stead, Graham & Hutchison; secretary-treasurer, G. H. Sheppard, International Business Machines Co. Ltd. Other directors of the Chapter are: J. B. Sutherland, C.A., Geo. A. Touche & Co.; E. A. Warnock, North Star Oil Ltd.; N. T. Sinclair, Canada Packers Ltd.; T. E. Saul, C.A., Dunwoody, Nicholl, Saul & Co.

The Chapter's financial statement for the past year showed revenue of \$107.71 and expenditure of \$60.84, surplus being increased from \$203.72 to \$250.59.

### HAMILTON

The financial statement of Hamilton Chapter for the year ended April 30, 1934, shows receipts of \$134.63, and expenditures of \$142.93, surplus being reduced from \$52.92 brought forward to \$44.62 carried forward.

### TORONTO

The financial statement of Toronto Chapter for the year ended April 30, 1934, shows receipts of \$511.25, and expenditures of \$483.66, surplus being increased from \$390.66 brought forward to \$418.25 carried forward.

### PERSONAL ITEMS

Charles D. Landell, one of the directors of our Toronto Chapter, and secretary-treasurer of Canada Dry Ginger Ale, Ltd., has been elected treasurer of Toronto Rotary Club.

J. Arthur Archambault, C.P.A., C.G.A., is now located in the Tramways Building, 159 Craig St., W., Montreal.

G. F. Cossar, C.G.A., with A. R. Clark & Co., Ltd., and a member of Toronto Chapter, was elected president of the General Accountants' Association at the twelfth annual meeting of that body held in Toronto recently.

### NEW MEMBERS

The following are new members of the Society:  
Dugal, P. F., 328 University Tower Bldg., Montreal, Que.  
Query, Romeo, Le Droit, 98 George St., Ottawa, Ont.  
Taylor, S., Bear Exploration & Radium, Ltd., 217 Bay St., Toronto, Ont.

# Examination Papers, 1934

## I. BOOK-KEEPING

1. (a) What are the objects of Accounting?  
(b) State briefly the three general effects that the credit portion of an entry may have on the accounts of a business.
2. Northern Manufacturers Limited have been recently incorporated for the manufacturing and marketing of radios. At the end of the fiscal year, the following statements are to be prepared for submission to the directors of the company:  
Manufacturing Account  
Trading Account  
Profit and Loss Account  
Surplus Account  
Balance Sheet

You are instructed that provision is to be made for the following items:

- (a) Depreciation on General Office Furniture
- (b) " " Plant and Machinery
- (c) " " Salesman's Automobile
- (d) " " Factory Building
- (e) " " Delivery Truck
- (f) Federal Income Tax
- (g) Bad Debts
- (h) Contingencies

Explain how the relative entries should be treated in preparing the above statements.

3. (a) What is the purpose of a General Journal. Explain briefly.  
(b) A company has accepted notes from its customers due and payable at various dates in the future. Finding itself short of funds, it discounts these notes at the bank. Assuming a note for \$1,000 payable three months hence without interest and discounted at the bank today at 6% per annum, what entry should be made:
  1. When the note is accepted from the customer.
  2. When the note is discounted.
  3. When the note is paid by the customer on presentation.
  4. When the note is not paid by the customer on presentation.
4. J. Nelles and R. Parrot enter into a partnership and agree to share profits and losses in the ratio of 5 to 3. Nelles invests \$16,000 made up of Cash \$3,000, Merchandise \$8,000, Store Equipment \$4,000, and a note of R. Green payable three months hence for \$1,000. This note is considered to be worth its face value. Parrot invests \$10,000 made up of Cash \$3,000, Accounts Payable \$3,000, and Store Property \$8,000 against which there is a mortgage of \$4,000 which is assumed by the firm. Show the entries in journal entry form necessary to open the books of the partnership and prepare a Balance Sheet as it would appear after the posting of these entries.
5. A manufacturing company operates its own garage for repairing its trucks and automobiles. The trucks are used for delivering raw materials to the factory, finished goods to the warehouse, and sold goods to customers, shipping points, etc. The automobiles are used by factory superintendents, department managers, and travelling salesmen. All purchases of gasoline, oil, grease, repair parts, etc., are charged to a Garage Account. Similarly all wages of repairmen, truck drivers and the garage superinten-

## COST AND MANAGEMENT

dent are charged to this account. Financial statements are prepared quarterly, and the Garage Account is to be cleared by distribution to various departments. Outline a method of apportioning this account and indicate the ultimate destination of the various items in the Financial Statements.

6. A company's warehouse which cost \$20,000 was destroyed by fire. 5% of the cost has been set aside each year for the past five years as a Reserve for Depreciation. The building was insured for \$12,000 and this amount was paid in full by the insurance company. The bookkeeper has made no entries covering this occurrence with the exception of recording the cheque for \$12,000 which was credited to Suspense Account. Give the journal entry which would be necessary in order that the books may reflect the true situation.
7. (a) What is meant by Depreciation?  
 (b) Discuss several methods of computing the depreciation of a machine in use in a factory.  
 (c) What relation is there between Depreciation (in an accounting sense) and the cost of repairs and small renewals to this machine.

### I. ACCOUNTANCY

1. In apportioning expenses over the various departments of a large retail store, what basis would you use for the following:—  
 Rent,  
 Fire Insurance on running stocks of goods,  
 Employer's Liability Insurance.
2. You are given the following details regarding the common stock capital of a company:—  
 Authorized; 200,000 shares of \$100 each;  
 Subscribed and issued; 100,000 shares;  
 Called up; \$90. per share;  
 Calls in arrears; \$300.

How would you set out these facts in the company's balance sheet?

3. K. Amherst and J. Falkirk have been carrying on business as Manufacturers and Traders. The following is their Trial Balance, showing their accounts for six months ending December 31st, 1933:—

Cash on Hand .....	\$ 900	
Cash in Royal Bank of Canada .....	35,500	
Bills & Notes Receivable .....	4,000	
Accounts Receivable .....	165,000	
Inventory, Raw Materials, as at July 1st ..	24,000	
" Finished Goods, as at July 1st ..	12,000	
" Work-in-Process, at at July 1st ..	43,500	
Equipment—General Office, (Cost) .....	28,000	
Reserve for Depreciation of Equipment — General Office .....		10,500
Factory Machinery, (Cost) .....	90,000	
Reserve for Depreciation of Factory Machinery .....		22,000
Factory Buildings, (Cost) .....	140,000	
Reserve for Depreciation of Factory Buildings .....		30,000
Loan from D. Low at 8% per annum .....		120,000
Land .....	300,000	
Bills & Notes Payable .....		21,800

# EXAMINATION PAPERS, 1934

Accounts Payable .....		180,000
Purchases of Raw Materials .....	108,000	
Allowances on Purchases of Raw Materials ..		4,000
Sales — Cash .....		4,500
Sales — Credit .....		378,000
Returns Inward of Credit Sales .....	2,000	
Inward freight on purchases of raw materials	8,000	
Duty on Purchases of Raw Materials .....	21,000	
Factory Tools, (Cost) .....	7,500	
Factory Wages—Direct .....	72,000	
“ Indirect .....	14,000	
Fire Insurance on Factory Buildings .....	1,200	
(Prepaid \$1,000.00 ????)		
Repairs to Machinery .....	500	
Factory Power .....	9,500	
Factory Manager's Salary .....	8,500	
General Factory Supplies .....	6,500	
Outward Freight and Delivery Charges ....	3,100	
Advertising .....	12,000	
Discounts .....	600	
Bad Debts .....	4,600	
Reserve for Bad Debts (Less \$820.00) .....		4,200
Salesmen's Salaries & Commissions .....	18,600	
General Office Salaries .....	10,600	
General Office Expenses .....	7,200	
K. Amherst, Current Account .....	7,100	
J. Falkirk, Current Account .....	9,600	
K. Amherst, Capital Account .....		250,000
J. Falkirk, Capital Account .....		150,000
	<u>\$1,175,000</u>	<u>\$1,175,000</u>

- (a) The Inventories as at December 31st were valued as follows:-
 

Raw Materials .....	\$33,000
Work-in-Process .....	14,500
Finished Goods .....	28,000
- (b) A physical inventory was taken of Factory Tools on December 31st, showing the value of tools on hands as \$4,300.
- (c) Reserves for Depreciation are to be increased for the six month's period, at the following rates per annum, based on the cost of the assets concerned:
 

Equipment of General Office ....	15%
Factory Machinery .....	12%
Factory Buildings .....	5%
- (d) The charge for Fire Insurance on Factory Buildings represents the premium on a three-year Policy, of which six months only had expired on December 31st.
- (e) The following have accrued but have not been paid as at December 31st:—
 

Factory Wages—Direct .....	\$ 800
“ Indirect .....	600
General Office Expenses .....	1,500
- (f) A Reserve for Discounts is to be set up equal to 1% of the Accounts Receivable outstanding as at December 31st.
- (g) The Final Balance Sheet figure for Reserve for Bad Debts is to equal 2% of the Accounts and Bills & Notes Receivable outstanding as at December 31st.



## COST AND MANAGEMENT

- (h) Interest on D. Low's Loan has not been paid nor credited for at six months ending December 31st.
- (i) It had been specified in the Partnership Agreement that the following three items were to be charged before finding the balance on the Profit and Loss appropriations account for division between the Partners:—
1. Partners' Salary—K. Amherst, at the rate of \$10,000 per annum, of which one-half is chargeable to the Factory and one-half to General Administration.
  2. Partners' Salary—J. Falkirk, at the rate of \$8,000 per annum, of which one-quarter is for supervision of the Selling Department and three-quarters for General Administration.
  3. Interest on Partners' Capital at 6% per annum.
- (j) After the above have been charged, Profits and Losses are divisible between the partners in the ratio of,  
     K. Amherst ..... 2/3  
     J. Falkirk ..... 1/3
- The following are required as an answer to this problem:—
- (1) Journal Entries necessary in (c), (d), (e), (f), (g), (h), (i), (j).
  - (2) Current Account of K. Amherst.
  - (3) Manufacturing Statement for period.
  - (4) Trading Statement for period.
  - (5) Profit & Loss; General Operating Statement for period.
  - (6) Statement of Net Income for period.
  - (7) Statement of Profit & Loss Appropriations for period.
  - (8) Balance Sheet as at December 31st, 1933.

## I. COST ACCOUNTING

1

- (a) What do you understand by the term "Perpetual Inventory?"
- (b) What methods may be adopted for valuing materials issued from Stores? Which do you prefer? Why?

2

Production Order Cost Sheet #3420, issued on March 1st, called for the manufacture for stock of 100 units XYZ, standard specifications, to be completed by April 15th. Work began on the order on March 2nd, and the daily reports provide the following information:

### Direct Materials

March	2—	Direct Materials Issued	Req. #396	.....	\$186.20
"	4—	"	" " #437	.....	41.08
"	27—	"	" " #692	.....	10.30
April	12—	"	" " #803	.....	15.35

### Direct Labour

March	2—	Operation No.	141	10	hours	@	40	cents	per	hour
"	3—	"	141	12	"	"	40	"	"	"
"	4—	"	141	12	"	"	40	"	"	"
"	5—	"	141	6	"	"	40	"	"	"
"	25—	"	142	5	"	"	45	"	"	"
"	26—	"	142	16	"	"	45	"	"	"
"	27—	"	142	16	"	"	45	"	"	"
"	28—	"	142	16	"	"	45	"	"	"
"	29—	"	142	3	"	"	45	"	"	"

# EXAMINATION PAPERS, 1934

April 12—	“	“	143	8	“	“	35	“	“	“
“ 13—	“	“	143	8	“	“	35	“	“	“
“ 14—	“	“	143	4	“	“	35	“	“	“

## Manufacturing Expense

Applied to Production at 25% of Prime Cost.

Order completed April 14th.

Required:

- Production Order Cost Sheet suitable for orders of this nature.
- Information for order #3420 entered thereon.
- The amount included in Work-in-Process inventory of March 31st for this order.
- Cost of producing this order.

3

Production Department A contains ten machines of a similar type. The following data is available in connection with the operation of this department for the year 1933.

Total original cost of the ten machines .....	\$9,000
Estimated scrap value of each machine .....	\$90
Floor space of Dept A. ....	400 sq. ft.
K.W. hours of electric power used per annum in the dept. ....	6000 k.w. hrs.
Sundry expenses for year chargeable to Dept A. ....	\$1,270
Number of machines per operator .....	2
Average weekly wages per operator .....	\$25
Normal number of hours which each machine operates per annum .....	2080 hrs.

Rate for electric power is 4 cents per k.w. hr.

The life of the machines is estimated, for purposes of depreciation, at 10 years.

Insurance and taxes for the year are charged to each department at a rate of 2% on the original cost of the machinery.

Building charges for the year are allocated to each department at a rate of 90 cents per square foot of floor space occupied.

From the above information, calculate a machine rate for Department A.

4

The Colonial Electric Company manufactured a small hand vacuum cleaner which they retailed at \$11.50 net. A review of the trial balances as at December 31st, 1933, revealed the following account balances:

Raw material purchases .....	\$161,920.00
Duty on purchases of raw materials .....	450.00
Direct Labour payroll paid .....	90,657.00
Salesmen's commissions & salaries .....	78,479.00
Power & Light—Factory .....	6,947.00
Rent (¾ Factory, ¼ Office) .....	3,600.00
Indirect Labour .....	12,094.00
Manufacturing Expense & Supplies .....	28,478.00
Travelling Expenses .....	21,966.00
Freight Out .....	3,907.00
Officers' Salaries .....	25,000.00
Sales .....	512,865.50
Interest & Bank Charges .....	200.00
Office Expense .....	24,778.50
Cash discounts allowed on sales .....	2,530.00
Cash discounts received on purchases .....	1,472.00
Other information disclosed at the same date was as follows:	
Direct labour accrued but unpaid .....	\$ 1,543.00
Depreciation on machinery & plant equipment .....	5,100.00

## COST AND MANAGEMENT

Inventory records disclosed the following:

Raw materials, Jan. 1, 1933 .....	\$ 12,000.00
Raw material, Dec. 31, 1933 .....	11,650.00
1020 unfinished units, Jan. 1, 1933 .....	3,794.00
1239 unfinished units, Dec. 31, 1933 .....	6,047.00
3160 completed units, Jan. 1, 1933 .....	22,436.00
2561 completed units, Dec. 31, 1933 .....	?

Prepare:

- (1) Statement of cost of production.
- (2) Statement of Trading, Profit and Loss.
- (3) Computation of:
  - (a) Number of units produced.
  - (b) Unit cost of production for the year.
  - (c) Amount of finished goods inventory, Dec. 31, 1933.

## II. COST ACCOUNTING

1. The Standard Overall Company, employing piecework operators and estimating material consumption on the basis of specification estimates, has allowed its cost system to fall behind and employs you to bring the work to date. You will find that, starting the year, opening entries appear on the Ledger as follows:

Finished Garments .....	\$ 110,000.00
Work in Process .....	5,000.00
Raw Material .....	20,000.00
Subsequent transactions, per books:	
Material Purchased .....	500,000.00
Material Delivered to Cutting Room .....	475,000.00
Productive Labor comprising 850,000 direct labour hrs.	250,000.00
General Factory Burden .....	125,000.00
Selling Expenses .....	150,000.00
Administrative Expenses .....	80,000.00
Garments Completed, Delivered to Finished Stock ..	840,000.00
Garments Sold, Valued at Estimated Manufacturing Cost .....	900,000.00
Sales .....	1,200,000.00
General Factory Burden Rate (Flat) 14½ cents per hour distributed on direct labor hours.	

Taking of Inventory necessitated the following adjustments:

Raw Material (Short of book amount) .....	3,000.00
Work in Process (Over book amount) .....	500.00
Finished Garments (Short of book amount) .....	1,500.00

Prepare skeleton ledger accounts of the various accounts required, also prepare Operating Statement and Profit and Loss Statement. The final balance of General Factory Burden, if any, should be transferred to Surplus.

2. What is "Budgetary Control?" What does it aim to accomplish and by what means?

3. The London Hotel maintains a laundry for handling its own and the laundry work of its guests. The hotel laundry work is known as flat work and consists chiefly of bed and table linen. The work done for guests is known as bundle work and consists of such articles as collars, handkerchiefs, shirts, socks, union suits and pyjamas.

The operation of the laundry consists of eight departments, some of which work on both flat work and bundle work, while others

# EXAMINATION PAPERS, 1934

work on only a single kind of laundry. The departments and kinds of work handled are:

- Marking—Bundle work only.
- Machine Washing—Bundle work and flat work.
- Extracting—Bundle work and flat work.
- Starching—Bundle work (collars and shirts only).
- Drying—Bundle work and flat work.
- Flat Work Ironing—Flat work only.
- Machine Ironing—Bundle work only.
- Sorting and Wrapping—Bundle work only.

Analysis of the payroll for a month shows the labor cost of each department to be: Marking \$75; Machine Washing, \$300; Extracting, \$150; Starching, \$300; Drying, \$150; Flat Work Ironing, \$225; Machine Ironing, \$223; Sorting and Wrapping, \$75.

Soap and supplies used during the month cost: Marking, \$70; Machine Washing, \$330; Starching, \$180; Flat Work Ironing, \$60; Machine Ironing, \$40; Sorting and Wrapping, \$220.

The Water bill for the month was \$120, chargeable to Machine Washing, and the Gas bill was \$90, chargeable two-thirds to Drying and one-third to Machine Ironing.

The Schedule of fixed charges showed the amount of depreciation, insurance, and taxes applicable to each department to be:

	Depreciation	Insurance	Taxes
Marking .....	\$10.00	\$ 3.00	\$1.00
Machine Washing .....	40.00	21.00	7.00
Extracting .....	30.00	10.00	3.00
Starching .....	20.00	7.00	2.00
Drying .....	20.00	6.00	2.00
Flat Work Ironing....	10.00	3.00	1.00
Machine Ironing .....	20.00	7.00	3.00
Sorting and Wrapping .	10.00	3.00	1.00

The light bill for the month was \$80, applicable in equal amounts to each department. Miscellaneous expenses were: Marking, \$5; Extracting, \$9; Starching \$3; Drying, \$8; Flat Work Ironing, \$21; Machine Ironing, \$13.

Costs are apportioned between the various articles laundered on a basis of weighted averages, as follows:

Collars	— 5 points each
Handkerchiefs	— 5 points each
Shirts	— 20 points each
Socks	— 10 points per pair
Union Suits	— 25 points each
Pajamas	— 35 points per suit
Flat Work	— 20 points per pound

The production for the month was: 6,000 collars; 12,000 handkerchiefs; 3,000 shirts; 3,000 pairs socks; 3,000 union suits; 1,000 suits of pajamas; and 5,500 pounds of flat work.

(a) Prepare an itemized statement showing the weighted average production of bundle work for the month and the weighted average production of flat work.

(b) Prepare a cost statement to show in detail the cost of each department for the month; the number of thousand points production of each department; the cost per thousand points for each department and for the total; the cost of bundle work and of flat work in each department; and the total cost of bundle work and of flat work for the month.

(c) Prepare a statement showing the cost for each department of laundering a suit of pyjamas.

## COST AND MANAGEMENT

4. Define Standard Costs. What are the functions of Standard Cost Accounting? When variations arise between Actual and Standard Costs with a Standard Cost Accounting System it is possible to fix the responsibility for such variations. Give examples of variations which might arise and demonstrate how responsibility can be determined in each case.

5. During the month of March 1934, the Wrought Iron Manufacturing Company incurred expense amounting to \$18,090.80 as shown by the Summary of Manufacturing Expense Orders. Labour Records show that the direct labour cost for the month was \$15,892.26 and the number of direct Labour Hours was 35,100.

(a) What is the average distribution rate of the factory as a whole for manufacturing expense—according to

(1) direct labour cost method of distribution

(2) direct labour hours method of distribution

You are given the following data in regard to the three production departments—

	Manufacturing Expense	Direct Labour Cost	Direct Labour Hours
Dept. X .....	\$ 5,750.40	\$ 4,612.30	11,100 hrs.
" Y .....	8,865.28	8,801.90	18,000 hrs.
" Z .....	3,475.12	2,478.06	6,000 hrs.
TOTAL ...	\$18,090.80	\$15,892.26	35,100 hrs.

The Cost Sheet of Production Order No. 1,004 shows material cost of \$540,000 and direct labour cost of \$2,841.00. The number of direct labour hours on the order as shown by the Daily Labour Reports is 6,160. The order was worked on in all three production departments and the labour was incurred as follows:—

	Direct Labour Cost	Direct Labour Hours
Dept. X .....	1,340.00	3,040 hrs.
" Y .....	681.00	1,432 hrs.
" Z .....	820.00	1,688 hrs.
TOTAL .....	\$2,841.00	6,160 hrs.

Manufacturing Expense is distributed in each department at that department's own respective rate.

(b) Find the Total Cost of Order No. 1004 under

(1) Direct Labour Cost Method of Distribution.

(2) Direct Labour Hours Method of Distribution.

## II. BUSINESS ORGANIZATION AND ADMINISTRATION

1. In one shop there is a straight piece work rate with a job priced at \$4.00, standard time 8 hours, and a worker can cut the time by 25 per cent. In another shop there is a Taylor piece rate of \$3.00 and \$2.00, standard time 5 hours, and a worker can cut the time 10 per cent. Which system would a workman prefer on the basis of possible earnings per day?
2. Describe what is meant by the following terms: (1) production centre; (2) job analysis; (3) progressive assembly; (4) factory expense; (5) labor turnover; (6) administrative pyramid; (7) standard time; (8) market analysis.
3. Discuss fully the subject of fatigue, its cause, effect, and the steps that may be taken to reduce it to a minimum.
4. Name and describe the functions of the General Superintendent in industry.
5. If you were asked to install in a poorly managed factory a scientific system of production control, show how you would attack the problem and what order of procedure you would follow.
6. (a) What is the attitude of organized labor and trade unions toward scientific management? (b) Discuss freely your personal views on the subject.

## MINUTES OF ANNUAL MEETING

### MINUTES OF ANNUAL MEETING

Minutes of annual meeting of the Canadian Society of Cost Accountants & Industrial Engineers held in Toronto. May 21, 1934.

**Minutes:** Minutes of the last annual meeting as printed in Cost and Management of May, 1933, were approved.

**Financial Statement:** The financial statement for the year ended April 30, 1934, was read. Moved, seconded and unanimously carried, That this statement be approved.

**Report for Year:** The report of the president and directors for the year ended April, 1934, was read. Moved, seconded and unanimously carried, That this report be approved.

**Chapters:** The difficulties of maintaining membership and activities in the smaller Chapters were discussed. It was suggested that the Dominion Board endeavour to develop policies to make the Society more valuable to members generally. Messrs. Lane, Mapp and Wright undertook to assist membership and other activities in Central Ontario Chapter.

**Students:** Moved, seconded and unanimously carried, That the resolution passed at the last annual meeting, regarding student membership, be rescinded.

**By-laws:** Moved, seconded and unanimously carried: That article 2 par. (a) be amended to read as follows: "The fee for membership shall be as follows: Regular \$15; non-resident (available to anyone resident at least 50 miles from a Chapter meeting place) \$10; student (available to students taking courses in accountancy or business organization from recognized institutions, and limited to a maximum of three years) \$5." And that article 7 par. (b) be amended to read as follows: "Each Chapter shall be entitled to 30 per cent of the fees collected by the Society from members within its territory, with a minimum of \$60 per year."

**Elections:** The following were nominated as directors of the Society: G. T. Bowden, R. W. Louthood, J. P. Masterson, D. R. Patton and J. Paul Rolland, of Montreal; W. M. Lane, B. W. Lang, E. D. MacPhee, K. A. Mapp, G. M. Mulholland and J. W. Spence, of Toronto; H. P. Wright, of Hamilton; E. Tailby, of Central Ontario; W. J. Mundell, of Winnipeg and G. R. Baird, of Vancouver. There being no further nominations the chairman then declared these elected directors.

**Prize:** A suggestion that a prize for "Chapter Notes" be arranged was passed along to the new board.

**Affiliation:** Possible affiliation with outside cost accounting bodies was discussed, and Mr. Houston was requested to look into this question.

**Thanks to President:** Moved, seconded and unanimously carried, That the Society extend its thanks to Mr. Houston for his able work and active interest in the Society as its president during the past year.

**Thanks to Auditors:** Moved, seconded and unanimously carried, That the Society extend its thanks to Messrs. Fred Page Higgins, F.C.A., and C. H. Pelling, C.A., for acting as auditors, and that they be reappointed.

**Thanks to Mr. Roberts:** Moved, seconded and unanimously carried, That the Society extend its thanks to Mr. C. P. Roberts, for securing the facilities of the Lakeview Golf and Country Club for this meeting.

**Adjournment:** The meeting then adjourned.

G. H. Houston, chairman.

W. A. McKague, secretary.

## COST AND MANAGEMENT

### REPORT OF PRESIDENT AND DIRECTORS

Presented at annual meeting of The Canadian Society of Cost Accountants and Industrial Engineers, Toronto, May 21, 1934.

We have pleasure in reporting as follows on the activities of the Society in the year ended April 30, 1934.

**MEMBERSHIP:** Due to continued difficult times in the early part of the year, our membership showed a further reduction, but a fair number of new members joined later in the year, and the 14-month period also enabled us to get most of the fees in. The following is a comparison of membership, fully paid, at the close of the year as compared with the close of the preceding year:

	Feb. 28, 1933	April 30, 1934
Montreal .....	114	115
Toronto .....	144	139
Hamilton .....	38	34
Central Ontario .....	16	11
Winnipeg .....	22	20
Vancouver .....	13	8
<b>Total .....</b>	<b>347</b>	<b>327</b>

Since the close of the year, several more members have paid their back dues, so the membership is slightly more favorable than indicated above. Montreal Chapter was able to show a small gain, and the membership shield has consequently been awarded for this year to Montreal Chapter, D. R. Patton, C.A., chairman.

**FINANCES:** The Society's revenue decreased from \$5,737.80 in the previous year to \$5,228.97 in the year just ended, and expenditures were reduced from \$5,283.19 to \$4,992.97, leaving a surplus of \$236.00 for the year. The Chapter proportion of the fees is 25 per cent, excepting that in the case of the three smaller chapters this was increased to 33 1/3 per cent for the past year, and the amount credited to Chapters was \$1,263.97 compared with \$1,327.63 in the previous year. The Society had had a financial surplus each year since 1928, the total now accumulated being \$3,738.32, most of which is invested in Canadian government securities.

**CHAPTERS:** The Montreal, Toronto, Hamilton and Central Ontario Chapters continued their usual programs of meetings. In Winnipeg and Vancouver meetings were partly suspended, but we hope that in the coming season they can again resume regular activities. The following is a summary of Chapter financial statements for the year:

	Balance brought forward	Receipts	Expenses	Balance carried forward
Montreal ....	\$286.54	\$428.31	\$666.24	\$ 48.60
Toronto .....	390.66	511.25	483.66	418.25
Hamilton .....	52.92	134.63	142.93	44.62
Central Ontario .....	67.17	49.85	61.90	55.12
Winnipeg ....	203.72	107.71	60.84	250.59
Vancouver ...	63.21	51.75	38.12	76.84
<b>TOTALS ....</b>	<b>\$1,063.91</b>	<b>\$1,283.80</b>	<b>\$1,453.69</b>	<b>\$894.02</b>

**PUBLICATIONS:** Our monthly, "Cost and Management," was published as usual during the year, excepting that issues of July and August 1933, were omitted as a special saving, the members receiving twelve issues as usual. Publication of a pamphlet giving by-laws



## BY-LAWS

and membership list, etc., was also omitted, but a duplicated membership list was distributed.

**REFERENCE LITERATURE:** Members of our Society continued to make use of our reference literature, our library of which is growing in extent each year.

**EMPLOYMENT:** Many of our members and other men with cost experience have been in need of employment, and though openings continue few, we have been able to place some in positions, mostly of junior grade.

**VISITS TO CHAPTERS:** The president of the Society visited and addressed meeting of Montreal, Toronto, Hamilton and Central Ontario Chapters, and the general secretary attended one or more meetings at each of these points. There were also some mutual visits by officers and members of our three Ontario Chapters. We regret that circumstances did not permit of greater personal contact with those in the west, but hope that this may be improved during the current year.

**BY-LAW AMENDMENTS:** After referring the question of fees to our Chapters, your directors, at their meeting in Montreal on April 20th, 1934, decided to the by-laws, establishing a fee of \$10 a year for non-residents, and a fee of \$5 a year for students, which we trust will be confirmed at this annual meeting.

**EXAMINATIONS:** Thirteen candidates tried various parts of our examinations held in 1933. Twenty-three have applied for 1934 examinations. Some concessions have been temporarily made to encourage students in cost accounting to try these examinations.

All of which is respectfully submitted.

G. H. Houston, president.

W. A. McKague, general secretary.

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## BY-LAWS

### ARTICLE 1. MEMBERSHIP

(a) Membership in the society shall be open to anyone of age eighteen years or over, who is engaged in or interested in any branch of accounting, industrial engineering or plant management.

(b) Application for membership shall be made on the form provided by the Society for that purpose.

(c) An application must be approved by the directors of the nearest Chapter. The directors of the Society reserve the right to refuse admission, or to cancel any membership.

### ARTICLE 2. FEES

(a) The fee for membership shall be as follows: Regular \$15; non-resident (available to anyone resident at least 50 miles from a chapter meeting place) \$10; student (available to students actually taking courses in accountancy or business organization from recognized institutions, and limited to a maximum of three years) \$5.

(b) The membership fee shall be payable in advance on the first day of May in each year. New members shall be required to pay only for the unexpired portion of the year.

(c) Any member who fails to make payment of his fee within three months from the date when it is payable, shall be liable to have his membership terminated.

### ARTICLE 3. GOVERNMENT

(a) The affairs of the Society shall be managed by a Board of Directors, which shall consist of not less than fifteen and not more

## COST AND MANAGEMENT

than thirty members of the Society who shall be elected by the members at the annual meeting of the Society, and of the president of the Society for the preceding ten years who are still members of the Society, and of the chairman and vice-chairman of each chapter.

(b) For the transaction of business at any meeting of the Board of Directors five shall form a quorum.

### ARTICLE 4. OFFICERS

(a) The Board of Directors shall, at their first meeting after such election, elect from among themselves a President, two Vice-Presidents, and Honorary Secretary and an Honorary Treasurer, and may also from time to time appoint such other officers as the business of the Society shall render expedient and determine their duties and remuneration.

(b) The President of the Society may designate any member of the Board to act as Director in charge of some special phase of the activities of the Society, and any Director so appointed shall make a periodical report to the President of his work in that connection.

### ARTICLE 5. MEETINGS

(a) Notice of the time and place for holding a general meeting of the Society shall be given at least fourteen days previously to the time in such notice specified for such meeting, by mail, addressed to the last known address of each member in good standing. At all general meetings of the Society every member in good standing shall be entitled to one vote and such vote may be given in person or by proxy if such proxy is himself a member in good standing. All questions proposed for the consideration of the members at such meetings shall be determined by the majority of votes, and the Chairman at such meetings shall have the casting vote in case of an equality of votes.

(b) A special general meeting of the Society may be called at any time by the President or by a majority of the Board of Directors or upon the written request of at least twenty members in good standing.

(c) For the transaction of business at any general meeting of the Society five members present shall constitute a quorum.

### ARTICLE 6. ANNUAL MEETING

(a) The fiscal year of the Society shall end on the last day of April in each year, and the annual meeting of the Society shall be held within two months thereafter at such time and place as the Board shall determine.

(b) A report of the work of the Society, together with a financial statement for the previous year, duly audited, shall be presented at each annual meeting.

(c) At the annual meeting in each year two Auditors shall be elected by the members of the Society from among their numbers, and the persons so elected shall certify as to the correctness of the next following financial statement.

### ARTICLE 7. CHAPTERS

(a) The Board of Directors may authorize the formation of Local Chapters in such centres as they deem advisable, may designate the territory to be allotted to such chapters, and may make such grants from the funds of the Society as they may deem expedient for the development and carrying on of Chapter work.

(b) Each Chapter shall be entitled to 30% of the fees collected by the Society from members within its territory, with a minimum of \$60 per year.

## BY-LAWS

(c) The fiscal years of all Chapters shall end on the last day of April in each year. The annual meeting of each Chapter shall be held not later than May 31st.

(d) Each Chapter shall be governed by a Board of Directors, elected at its annual meeting, of not less than seven and not more than fifteen members. These directors shall elect from their own number a Chairman, a Vice-Chairman and a Secretary-Treasurer or a Secretary and a Treasurer. At any meeting of the Directors of the Chapter five shall constitute a quorum.

(e) Each Chapter shall have the right to make such other regulations as may be found necessary to meet local conditions, subject always to the approval of the Board of Directors of the Society.

(f) Each Chapter shall, within one month after the close of its financial year, forward to the Society a copy of its financial statement for the year.

### ARTICLE 8. CORPORATE SEAL

The Society shall have a Corporate Seal. An impression of the Corporate Seal, certified by either the President or a Vice-President and by either the Honorary Secretary or the Honorary Treasurer, shall be binding upon the Society, but the Officers so certifying shall be personally accountable to the Directors and the Society for the due and proper exercise of such authority.

### ARTICLE 9. SIGNING OFFICERS

All cheques or other negotiable instruments not requiring the use of the Corporate Seal shall be signed by the President, or Vice-President, or the Honorary Treasurer and by the General Secretary or other officer designated by the Directors.

### ARTICLE 10. EXAMINATIONS

The Board of Directors shall have power to hold examinations and to issue certificates of efficiency to successful candidates.

### ARTICLE 11. AMENDMENT OF BY-LAWS

The Directors may from time to time repeal, amend or re-enact by-laws of the Society, but every such by-law and every repeal, amendment or re-enactment thereof, unless in the meantime confirmed at a general meeting of the Society, duly called for that purpose, shall only have force until the next annual meeting of the Society, and in default of confirmation thereat shall, at and from that time, cease to have force; provided, however, that no such repeal, amendment or re-enactment thereof shall have any force or effect, whatever until approved by the Secretary of State in accordance with sub-section 4 of Section 7A of the Companies Act.

### ARTICLE 12

All former by-laws of the Society are hereby repealed.

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An optimist is a man who, when he is told the wolf is at the door, refuses to believe a word of it and therefore opening his door thus unprepared is promptly gobbled up by the wolf.

A pessimist, upon learning that the wolf is at the door, believes it is o use to struggle further so he opens the door and gives himself up to the wolf.

An opportunist, however, learns with interest that a wolf is at the door. After studying the situation thoroughly he lures the wolf into the house and emerges after a brief interval clad in a new wolf-skin coat!

# COST AND MANAGEMENT

## FINANCIAL STATEMENT

### THE CANADIAN SOCIETY OF COST ACCOUNTANTS & INDUSTRIAL ENGINEERS

#### BALANCE SHEET 30TH APRIL, 1934

#### ASSETS

Cash in Bank .....	\$ 346.62
Investments at Cost (Market Value \$3,770) ....	3,492.95
Interest Accrued .....	18.75
	<u>\$ 3,858.32</u>

#### LIABILITIES

Membership Fees Received in Advance .....	\$ 120.00
Surplus:	
Balance March 1, 1933 .....	\$3,502.32
Surplus for fourteen months ended	
April 30, 1934 .....	236.00
	<u>3,738.32</u>
	<u>\$ 3,858.32</u>

Examined and found correct.

FRED PAGE HIGGINS, F.C.A.  
C. H. PELLING, C.A.

Toronto, 21st May, 1934.

#### STATEMENT OF REVENUE AND EXPENDITURES FOR FOURTEEN MONTHS ENDED 30TH APRIL, 1934

#### Revenue:

Membership Fees Collected .....	\$ 4,749.55
Interest Earned .....	204.17
Publications Revenue .....	230.25
Examination Fees .....	45.00
	<u>\$ 5,228.97</u>

#### Expenditures:

General Expenses .....	\$ 1,920.74
Chapter Allowances .....	1,263.97
Publications Expense .....	1,790.92
Bank Exchange .....	17.34
Surplus for the fourteen months .....	236.00
	<u>\$ 5,228.97</u>

### THE CANADIAN SOCIETY OF COST ACCOUNTANTS & INDUSTRIAL ENGINEERS

MEMBERSHIP, MAY 31, 1934

#### MONTREAL CHAPTER

- + Archambault, J. A., C.P.A., C.G.A., 159 Craig St. W., Montreal.
- + Ashworth, T., Lymans, Ltd., Montreal.
- + Bacon, M. H., Consolidated Lithograph Mfg. Co., Ltd., Montreal.
- + Ballantyne, A., C.A., Peat Marwick, Mitchell & Co., Montreal.
- + Bancroft, J. J. F., Jenkins Bros., Ltd., Montreal.
- + Barrow, J. G., Dominion Rubber Co., Ltd., Montreal.

## MEMBERSHIP

- 1 Beauvais, J. E., C.G.A., Robert Mitchell Co., Ltd., Montreal.
- 1 Belanger, L., C.P.A., 1527 Crescent St., Montreal.
- 1 Bentley, Wm., C.G.A., McGill University, Montreal.
- 1 Bernier, J. I., McEwen, Cameron, Ltd., Montreal.
- 1 Bernier, L. P., 2539 Sherbrooke St., E., Montreal.
- 1 Bhereur, H., Viau Biscuit Corp., Ltd., Montreal.
- 1 Bishop, A. E., C.A., P. S. Ross & Sons, Montreal.
- 1 Black, J. M., Robert Mitchell Co., Ltd., St. Laurent, Que.
- 1 Blunt, H. W., C.A., A. K. Fisk, Skelton & Co., Montreal.
- 1 Booth, W., Shawinigan Water & Power Co., Montreal.
- 1 Bowden, G. T., M.C.I., C.G.A., Steel Co. of Canada, Ltd., Montreal.
- 1 Broomer, A., C.A., Robert Mitchell Co., Ltd., St. Laurent, Que.
- 1 Burdon, J. A., Canadian Steel Foundries, Ltd., Montreal.
- 1 Buzzell, L. N., C.A., Clarkson, McDonald, Currie & Co., Montreal.
- 1 Campbell, W. S., Montreal Lithographing Co., Ltd., Montreal.
- 1 Carswell, Wm., C.A., Northern Electric Co., Ltd., Montreal.
- 1 Cartier, A., Montreal Tramways Commission, Montreal.
- 1 Davies, C. C., Brisbane & Davies, Montreal.
- 1 Davies, E. W., Dominion Textile Co., Ltd., Montreal.
- 1 de Cotret, J. H. R., 103 Notre Dame St., Three Rivers, Que.
- 1 Desrochers, J. A., C.A., Frontenac Breweries, Ltd., Montreal.
- 1 de Tilly, A., Dominion Oilcloth & Linoleum Co., Ltd., Montreal.
- 1 Douglas, J. C., Frost & Wood Co., Ltd., Smith Falls, Ont.
- 1 Dufresne, P. E., Bank of Nova Scotia Bldg., Montreal.
- 1 Dugal, B. A., Superintendent of Insurance, Quebec, Que.
- 1 Dugal, P. F., 328 University Tower Bldg., Montreal.
- 1 Egerton, R. P., C.A., E. B. Eddy Co., Ltd., Hull, Que.
- 1 Farish, D. M., C.A., Northern Electric Co., Ltd., Montreal.
- 1 Favreau, L., Ecole des Hautes Etudes, Montreal.
- 1 Galipeau, L., Regent Knitting Mills, Ltd., Montreal.
- 1 Giguere, A., Viau Biscuit Corp., Ltd., Montreal.
- 1 Glass, H. F., Distillers Corp., Ltd., 1430 Peel St., Montreal.
- 1 Gowan, A. A., C.A., Geo. A. Touche & Co., Montreal.
- 1 Grimard, A., C.A., 45 St. James St., W., Montreal.
- 1 Hannen, J. D., Congoleum Canada, Ltd., Montreal.
- 1 Hartz, R. E., Power Engineering Co., Ltd., Montreal.
- 1 Hemming, H. K. S., B.A., C.P.A., C.G.A., Bank of Nova Scotia Bldg.,  
Charlottetown, P.E.I.
- 1 Hodgson, C. W., C.A., Consolidated Paper Corp., Ltd., Montreal.
- 1 Hoskins, H. M., C.A., Price, Waterhouse & Co., Montreal.
- 1 Johnson, R. G., Burroughs Adding Machine of Canada, Ltd., Montreal.
- 1 Johnson, R. R., Henry Birks & Son, Ltd., Montreal.
- 1 Joubert, L., C.G.A., C.P.A., 34 Rue Saint-Jacques Ouest, Montreal.
- 1 Joubert, R., Dept. of National Revenue, Income Tax Division, Montreal.
- 1 Joule, W. G., Price, Waterhouse & Co., Montreal.
- 1 Kidd, D. C., General Foods, Ltd., Montreal.
- 1 King, F. J., 4630 Draper Ave., N.D.G., Montreal.
- 1 Klein, H. R., Julius Kayser & Co., Ltd., Sherbrooke, Que.
- 1 Laing, J. A., Canada Malting Co., Ltd., Montreal.
- 1 Lanthier, A., Rolland Paper Co., Ltd., Mont Rolland, Que.
- 1 Lefebvre, P. E., Robert Mitchell Co., Ltd., Montreal.
- 1 Loiseau, E. J., Canadian International Paper Co., Ltd., Montreal.
- 1 Louthood, R. W., Beauharnois Power Corp., Ltd., Montreal.
- 1 MacKenzie, G. I., Northern Electric Co., Ltd., Montreal.
- 1 MacVicar, C. B., Robert Mitchell Co., Ltd., Montreal.
- 1 Madge, A. V., Crawley & McCracken Co., Ltd., Montreal.
- 1 Maloney, E., United Typewriters, Ltd., Montreal.
- 1 Marrison, W. H., Canadian Steel Foundries, Ltd., Montreal.

## COST AND MANAGEMENT

- ✕ Masse, L., C.P.A., I.P.A., 195A Main St., Hull, Que.
- ✕ Masterson, J. P., C.G.A., Canadian Industrial Alcohol Co., Ltd., Montreal.
- ✕ Miller, J. S., Gazette Printing Co., Ltd., Montreal.
- ✕ Miller, R. C., International Business Machines Co., Ltd., Montreal.
- ✕ McDougall, H. J., C.A., Howard J. McDougall & Co., St. John's Nfld.
- ✕ McIver, F. M., Canadian Car & Foundry Co., Ltd., Montreal.
- ✕ McKinnon, H. B., The Tariff Board, Ottawa, Ont.
- ✕ McLean, F. S., Miner Rubber Co., Ltd., Granby, Que.
- ✕ McMillan, L. N., Dominion Oilcloth & Linoleum Co., Ltd., Montreal.
- ✕ Paterson, J., C.A., Riddell, Stead, Graham & Hutchison, Montreal.
- ✕ Patton, D. R., C.A., 201 Notre Dame St., W., Montreal.
- ✕ Peddie, D. R., Shawinigan Engineering Co., Ltd., Montreal.
- ✕ Peto, L. A., Canadian Car & Foundry Co., Ltd., Montreal.
- ✕ Pleau, P., General Motors of Canada, Ltd., Montreal.
- ✕ Pouliot, J. M., Legislative Bldgs., Quebec, Que.
- ✕ Prefontaine, L., City Treasurer, Sherbrooke, Que.
- ✕ Query, R., Le Droit, Ottawa, Ont.
- ✕ Racine, C. R., Charles E. Frosst & Co., Montreal.
- ✕ Renaud, J. G., J. B. Lefebvre, Montreal.
- ✕ Renaud, P. A., C.G.A., Insurance Bldg., Quebec, Que.
- ✕ Rhodes, L., Consolidated Lithograph Mfg. Co., Ltd., Montreal.
- ✕ Roberts, F., Wabasso Cotton Co., Ltd., Three Rivers, Que.
- ✕ Robitaille, E., 266 St. James St., W., Montreal.
- ✕ Rolland, J. P., Rolland Paper Co., Ltd., St. Jerome, Que.
- ✕ Rosevear, J. J., C.P.A., 1434 St. Catherine St. W., Montreal.
- ✕ Ross-Ross, D., Howard Smith Paper Mills, Ltd., Cornwall, Ont.
- ✕ St. Denis, B., Direct Sales Corp., Ltd., Montreal.
- ✕ Sanford, W. D., Canadian Marconi Co., Montreal.
- ✕ Schurman, R., C.A., R. Schurman & Co., Montreal.
- ✕ Scott, G. W., C.A., P. S. Ross & Sons, Montreal.
- ✕ Seymour, P. F., C.A., Robert Wilson & Co., Montreal.
- ✕ Shink, J. A., Mount Royal Hotel, Ltd., Montreal.
- ✕ Smith, R., Windsor Hotel, Ltd., Montreal.
- ✕ Smyth, T. I., David & Frere, Montreal.
- ✕ Sparks, H. McD., Northern Electric Co., Ltd., Montreal.
- ✕ Stephen, J. McL., Jas. Richardson & Sons, Ltd., Montreal.
- ✕ Stephenson, J. R., Enamel & Heating Products, Ltd., Sackville, N. B.
- ✕ Stevens, J. T., Bank of Montreal, Montreal.
- ✕ Sugars, Prof. R. M., McGill University, Montreal.
- ✕ Swayne, A. A., Steel Co. of Canada, Ltd., Montreal.
- ✕ Thibault, P., Rolland Paper Co., Ltd., St. Jerome, Que.
- ✕ Thompson, Prof. R. R., M.C., V.D., A.C.A., C.A., McGill University, Montreal.
- ✕ Tremblay, C., Ayers, Ltd., Lachute Mills, Que.
- ✕ Wert, W. H., C. A., Sharp, Milne & Co., Montreal.
- ✕ Whittaker, G., 1122 Beaver Hall Hill, Montreal.
- ✕ Willcox, F., C.A., Geo. A. Touche & Co., Montreal.
- ✕ Wilson, F. G., 190 King St., E., St. John, N. B.
- ✕ Wright, P. W., Shawinigan Engineering Co., Ltd., Montreal.

## TORONTO CHAPTER

- Abrams, G., C.A., J. P. Langley & Co., Toronto.
- Appleton, G., Toronto Hydro-Electric System, Toronto.
- Ashmore, M. L., C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.
- Ausman, R. S. M., Gurney Foundry Co., Ltd., Toronto.
- Banigan, J., B.A.Sc., 91 Crescent Rd., Toronto.

## MEMBERSHIP

- Beamish, B. D., Canadian Bank of Commerce, Toronto.  
 Beatty, W. J. Beardmore Leathers, Ltd., Toronto.  
 Beeston, G. H., c/o V. D. Harbinson, Toronto.  
 Bennett, E. J., F.C.A., Geo. A. Touche & Co., Toronto.  
 Bradshaw, M. A., C.A., North American Life Assurance Co., Toronto.  
 Brickenden, W. T., Thorne, Mulholland, Howson & McPherson, Toronto.  
 Bronsdon, H. H., British American Oil Co., Ltd., Toronto.  
 Bunt, H. E., Lever Bros., Ltd., Toronto.  
 Burdett, R. A., 85 Bromley Road, Shortlands, Kent, England.  
 Burpee, H. T., C.A., 28 Wellington St. E., Toronto.  
 Carr, A. H., C.A., Dominion Association of Chartered Accountants, Toronto.  
 Carroll, F. J., Felt & Tarrant, Ltd., Toronto.  
 Christie, D. T., Business Systems, Ltd., Toronto.  
 Clarke, J., C.A., Clarke, Houston & Co., Toronto.  
 Cleminson, F. G., The Bank of Toronto, Toronto.  
 Collard, J. L., C.P.A., Regal Films, Ltd., Toronto.  
 Conder, L. E., Recording & Statistical Corp., Ltd., Toronto.  
 Conrad, H. S., Geo. Weston Bread & Cakes, Ltd., Toronto.  
 Copeman, N. C., Imperial Oil, Ltd., Toronto.  
 Cossar, G. F., C.G.A., A. R. Clarke & Co., Ltd., Toronto.  
 Daly, G. W., Canadian Locomotive Co., Ltd., Kingston, Ont.  
 Dean, C. D., Imperial Oil, Ltd., Toronto.  
 Dilworth, R. J., F.C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Dilworth, R. W. E., C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Dingle, G. R. M., Massey-Harris Co., Ltd., Toronto.  
 Dunlop, J. A., Gutta Percha & Rubber, Ltd., Toronto.  
 Eddis, C. S., F.C.A., W. C. Eddis & Sons, Toronto.  
 Edwards, H. P., F.C.A., Edwards, Morgan & Co., Toronto.  
 Eells, J. E., Exide Batteries of Canada, Ltd., Toronto.  
 Elliott, J., T. Eaton Co., Ltd., Toronto.  
 English, J. J., C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Evans, J. W., 8 Lestrangle Place, Toronto.  
 Faux, C., Staunton's Ltd., Toronto.  
 Ferguson, W. S., C.A., Seburn, Ferguson & Baker, Toronto.  
 Field, A., International Petroleum Co., Ltd., Toronto.  
 Flynn, J., Oscar Hudson & Co., Toronto.  
 Gillelan, K. R., Agnew-Surpass Shoe Stores, Ltd., Brantford, Ont.  
 Glasco, J. G., C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Glendinning, W. D., C.A., Glendinning, Gray & Roberts, Toronto.  
 Guilfoyle, H. E., F.C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Gunn, E., F.C.A., Gunn, Roberts & Co., Toronto.  
 Hamlin, E. L. B., T. Eaton Co., Ltd., Toronto.  
 Hand, G. H., Maple Leaf Milling Co., Ltd., Toronto.  
 Hawkins, F. G., Pendrith Machinery Co., Ltd., Toronto.  
 Heighton, J. P., Canada Malting Co., Ltd., Toronto.  
 Hetherington, H. M., Viceroy Mfg. Co., Ltd., Toronto.  
 Higgins, F. P., F.C.A., Fred Page Higgins & Co., Toronto.  
 Hill, W. A., Willards Chocolates, Ltd., Toronto.  
 Houghton, R. F., Maple Leaf Milling Co., Ltd., Toronto.  
 Houston, G. H., Rolph-Clark-Stone, Ltd., Toronto.  
 Howard, E. F., International Petroleum Co., Ltd., Toronto.  
 Hutton, P., Canada Dry Ginger Ale, Ltd., Toronto.



## COST AND MANAGEMENT

- Island, A. W., Canadian Acme Screw & Gear, Ltd., Toronto.  
 Jardine, T. S., United Drug Co., Ltd., Toronto.  
 Jephcott, G., C.A., P. S. Ross & Sons, Toronto.  
 Kerr, L. W., Spruce Falls Power & Paper Co., Ltd., Toronto.  
 Kingsburgh, G., C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Knight, H. C., Amalgamated Electric Corp., Ltd., Toronto.  
 Landell, C. D., Canada Dry Ginger Ale, Ltd., Toronto.  
 Lane, W. M., Lever Bros., Ltd., Toronto.  
 Lang, B. W., Goodyear Tire & Rubber Co. of Canada Ltd., New Toronto, Ont.  
 Leaver, G. F., C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Lefrancois, O. A., W. D. Beath & Son, Ltd., Toronto.  
 Letheren, B. C., Willard Storage Battery Co. of Canada, Ltd., Toronto.  
 Lindsay, E. C., Honey Dew, Ltd., Toronto.  
 Lister, E. H., Page-Hersey Tubes, Ltd., Toronto.  
 Livingston, C. H., W. J. Gage & Co., Ltd., Toronto.  
 Macdonald, A., Bank of Nova Scotia, Toronto.  
 MacPhee, E. D., York Knitting Mills, Ltd., Toronto.  
 Mapp, K. A., F.C.A., Henry Barber, Mapp & Mapp, Toronto.  
 Matthews, F. K., The Canadian Bank of Commerce, Toronto.  
 Maude, F. A., The Cop Clark Co., Ltd., Toronto.  
 Mayhew, G. F., Hinde & Dauch Paper Co. of Canada, Ltd., Toronto.  
 Merson, H. S., C.A., Peat, Marwick, Michell & Co., Toronto.  
 Metcalfe, R. H., Massey-Harris Co., Ltd., Toronto.  
 Millar, D. L., Dominion Paper Box Co., Ltd., Toronto.  
 Morrison, M. E. H., Wm. Neilson, Ltd., Toronto.  
 Mulholland, G. M., F.C.A., Thorne, Mulholland, Howson & McPherson, Toronto.  
 Mullinger, C. H., International Petroleum Co., Ltd., Toronto.  
 McCaffrey, W. A., Office Specialty Mfg. Co., Ltd., Newmarket, Ont.  
 McClelland, D. M., C.A., Price, Waterhouse & Co., Toronto.  
 McConnell, C. G., C.A., Riddell, Stead, Graham & Hutchison, Toronto.  
 McKee, J. E., International Business Machines Co., Ltd., Toronto.  
 McKee, J. M., International Business Machines Co., Ltd., Toronto.  
 McNeill, T. L., Robertson Bros., Ltd., Toronto, Ont.  
 McPherson, R. S., C.A., Thorne, Mulholland, Howson & McPherson, Toronto.  
 Nash, A. E., C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Neff, J. R., C.A., Neff, Robertson & Co., Toronto.  
 Oaten, R., The Gurney Foundry Co., Ltd., Toronto.  
 Ogden, A. L., Imperial Bank of Canada, Toronto.  
 Patterson, C. A., C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Patton, D. C., Sangamo Co., Ltd., Toronto.  
 Pelling, C. H., C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Peters, G. A., C.A., Gordon Peters & Co., Toronto.  
 Pidduck, J. R., Neptune-National Meter Co., Ltd., Toronto.  
 Pointon, E. T., Cameron, Pointon & Merritt, Toronto.  
 Pratt, H. S., Consolidated Bakeries of Canada, Ltd., Toronto.  
 Prior, P. G., Associated Cannery, Ltd., Toronto.  
 Putt, W. F., The Steel Co. of Canada, Ltd., Toronto.  
 Reid, F. E., The Robert Simpson Co., Ltd., Toronto.  
 Roberts, C. P., C.A., J. P. Langley & Co., Toronto.  
 Robertson, W. A., Lever Bros., Ltd., Toronto.

## MEMBERSHIP

Scott, P. L., United Drug Co., Ltd., Toronto.  
 Scream, A., Toronto Hydro-Electric System, Toronto.  
 Scully, V. W. T., J. D. Woods & Co., Ltd., Toronto.  
 Shepherd, A. B., C.A., Peat, Marwick, Mitchell & Co., Toronto.  
 Shiach, H. A., F.C.A., Rutherford Williamson & Co., Toronto.  
 Simpson, J. R., Imperial Oil, Ltd., Toronto.  
 Slater, F. U., Jr., The Gendron Mfg. Co., Ltd., Toronto.  
 Smith, H. R., Taylor Instrument Companies of Canada, Ltd., Toronto.  
 Sorley, S. H., C.A., Thorne, Mulholland, Howson & McPherson, Toronto.  
 Sparks, E., Imperial Varnish & Color Co., Ltd., Toronto.  
 Spence, J. W., Canadian Kodak Co., Ltd., Mount Dennis, Ont.  
 Sukloff, H., The Gurney Foundry Co., Ltd., Toronto.  
 Taylor, C. B., Ernst & Ernst, Toronto.  
 Taylor, J. W., C.A., Price, Waterhouse & Co., Toronto.  
 Taylor, R. F. B., C.A., Edwards, Morgan & Co., Toronto.  
 Taylor, S., Bear Exploration & Radium, Ltd., Toronto.  
 Taylor, W. D., F.C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Tindale, A. S., C.A., Muirheads Cafeterias, Ltd., Toronto.  
 Tucker, E. J., Consumers Gas Co. of Toronto, Toronto.  
 Turner, J., C.A., The T. Eaton Co., Ltd., Toronto.  
 Upper, H. C., Canadian Wineries, Ltd., Toronto.  
 Warmingham, G. A., 60 Kelso Ave., Scarboro Bluffs, Ont.  
 Warnes, C., Canadian Kodak Co., Ltd., Mount Dennis, Ont.  
 Weir, T., C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.  
 Weldon, W. B., C.A., Henry Barber, Mapp & Mapp, Toronto.  
 Wheatley, N. W., Langley's, Ltd., Toronto.  
 Whitten, C. E., Firstbrook Boxes, Ltd., Mount Dennis, Ont.  
 Williams, R. J., Canadian Wm. A. Rogers, Ltd., Toronto.  
 Williamson, R., F.C.A., Rutherford Williamson & Co., Toronto.  
 Wright, L. V., 244 Bay St., Toronto.  
 Yeomans, R., Brigdens, Ltd., Toronto.

## HAMILTON CHAPTER

Alston, G. E., Pure Milk Co., Ltd., Hamilton.  
 Arnold, E. B., Norton Co. of Canada, Ltd., Hamilton.  
 Ballentyne, A. J., Firestone Tire & Rubber Co., Ltd., Hamilton.  
 Berquist, C. W., Hamilton Hydro-Electric Commission, Hamilton.  
 Brice, A. E., Brown Boggs Foundry & Machine Co., Ltd., Hamilton.  
 Briggs, D. R., Bell Thread Co., Ltd., Hamilton.  
 Caskie, D. R., Firestone Tire & Rubber Co. of Canada, Ltd., Hamilton.  
 Conway, J. J., 21 Main St., E., Hamilton.  
 Dawson, R., The Hoover Co., Ltd., Hamilton.  
 Dickson, B. H., Dominion Glass Co., Ltd., Hamilton.  
 Farnan, H. J., National Steel Car Corp., Ltd., Hamilton.  
 Fleming, G. S., Hamilton Bridge Co., Ltd., Hamilton.  
 Frazer, A. C., Steel Co. of Canada, Ltd., Hamilton.  
 Furneaux, W., Polymet of Canada, Ltd., Hamilton.  
 Haywood, L. J., C.A., Monarch Knitting Co., Ltd., Dunnville, Ont.  
 Horton, K. M., Cosmos Imperial Mills, Ltd., Hamilton.  
 Howey, A. G., Mercury Mills, Ltd., Hamilton.  
 Klager, G. T., Dominion Woollens & Worsteds, Ltd., Hespeler, Ont.  
 Land, R. A., Pigott Construction Co., Ltd., Hamilton.  
 LeBrocq, S. E., Steel Co. of Canada, Ltd., Hamilton.  
 Long, M. I., C.A., Clarke, Houston & Co., Hamilton.  
 Love, R. E., Hoover Co., Ltd., Hamilton.  
 Menzel, O. H., Polymet of Canada, Ltd., Hamilton.  
 Moffatt, F., International Harvester Co. of Canada, Ltd., Hamilton.

## COST AND MANAGEMENT

McMillan, W. M., C.A., Riddell, Stead, Graham & Hutchison, Hamilton.  
Pratt, P. B., International Business Machines Co., Ltd., Hamilton.  
Richardson, S. G., C.A., Richardson, Smith, Ferrie & Co., Hamilton.  
Scott, C. S., F.C.A., C. S. Scott & Co., Hamilton.  
Smitton, W. B., Dominion Foundries & Steel, Ltd., Hamilton.  
Stott, S., International Silver Co., Ltd., Hamilton.  
Vivian, C. A. Canadian Porcelain Co., Ltd., Hamilton.  
Ward, W. R., Dominion Natural Gas Co., Ltd., Hamilton.  
Watson, R. A., N. Slater Co., Ltd., Hamilton.  
Wigle, C. E., Howell Litho Co., Ltd., Hamilton.  
Wright, H. P., Wright-Pounder & Co., Hamilton.  
Yardley, A. G., Hoover Co., Ltd., Hamilton.

## CENTRAL ONTARIO CHAPTER

Black, C. T., 199 North Water St., Galt.  
Brown, J. G., C.A., Thorne, Mulholland, Howson & McPherson, Kitchener.  
Collins, J. L., C.A., Mutual Like Assurance Co. of Canada, Waterloo.  
Earnshaw, G., Guelph Carpet & Worsted Spinning Mills, Ltd., Guelph.  
Good, G. R., Kaufman Rubber Co., Ltd., Kitchener.  
Kidd, J. J., C.A., Thorne, Mulholland, Howson & McPherson, Galt.  
Marshall, A. H., Taylor-Forbes, Ltd., Guelph.  
Odendahl, R. T. F., La France Textiles, Ltd., Woodstock.  
Osborne, J. E., Canada Ingot Iron Co., Ltd., Guelph.  
Tailby, E., I.P.A., Medical Arts Bldg., Kitchener.  
Weber, I. K., Kaufman Rubber Co., Ltd., Kitchener.

## WINNIPEG CHAPTER

Anderson, J. S., C.A., Western Canada Flour Mills Co., Ltd., Winnipeg.  
Elliott, G. H., Carter-Halls-Aldinger Co., Ltd., Winnipeg.  
Gilbert, F. C., C.A., Gilbert & Laird, Winnipeg.  
Harvey, F. M., C.A., Harvey & Marrison, Calgary, Alta.  
Hodson, D. C., Dominion Bridge Co., Ltd., Winnipeg.  
Howard, H. E., C.A., Grain Exchange Bldg., Calgary, Alta.  
Hurley, W. M., W. M. Hurley & Co., Winnipeg.  
Lofthouse, D. S., C.A., 25 Purcell Ave., Winnipeg.  
McVey, W. W., C.A., MacDonald, McVey & Co., Winnipeg.  
Morden, H. J., C.A., Oscar Hudson & Co., Winnipeg.  
Mundell, W. J., C.A., Ogilvie Flour Mills Co., Ltd., Winnipeg.  
Mundie, J. G., C.A., Riddell, Stead, Graham & Hutchison, Winnipeg.  
Nicholl, C. W., C.A., Dunwoody, Nicholl, Saul & Co., Winnipeg.  
Parton, J., C.A., Geo. A. Touche & Co., Winnipeg.  
Pildrem, A. S., Canada Bread Co., Ltd., Winnipeg.  
Saul, T. E., C.A., Dunwoody, Nicholl, Saul & Co., Winnipeg.  
Sheppard, G. H., International Business Machines Co., Ltd., Winnipeg.  
Sinclair, N. T., Canada Packers, Ltd., St. Boniface, Man.  
Sutherland, J. B., C.A., Geo. A. Touche & Co., Winnipeg.  
Thompson, L., Great West Saddlery Co., Ltd., Winnipeg.  
Warnock, E. A., North Star Oil, Ltd., Winnipeg.

## VANCOUVER CHAPTER

Baird, G. R., Associated Dairies, Ltd., Vancouver.  
Griffiths, W., C.A., P. O. Box 327, New Westminster, B.C.  
Larson, F. T., Granby Consolidated Mining & Smelting Co., Ltd., Anxox, B.C.  
McGlashan, G. S., B. C. Sugar Refining Co., Ltd., Vancouver.  
Phillips, T. F., Sterling Food Markets, Ltd., Vancouver.  
Plommer, J. J., C.A., Shaw, Salter & Plommer, Vancouver.  
Willis, M., Union Oil Co. of Canada, Ltd., Vancouver.

